# *Preface*

The following conventions have been used in this document:

| | |
|---|---|
| `Courier Font` | Used to indicate an entry to be typed at the keyboard, UNIX commands, titles of windows and dialog boxes, and screen text. For example:<br><br>Select the `Show TBMD Window` option from the `TDAs` pull-down menu to open the `TBMD SUMMARY` window. |
| “Quotation Marks” | Used to indicate prompts and messages that appear on the screen. |
| *Italics* | Used for emphasis. |

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# Section 1

# Introduction

The Theater Ballistic Missile Defense (TBMD) application is the user interface for the Theater Ballistic Missile (TBM) launch detection, tracking, and display software. In general, the software allows the operator to perform the following functions:

- Display TBM launch points and trajectory paths on the tactical display. The "whole path" launch and impact area can be viewed using the `ZOOM` button.
- View dynamically updated status windows for selected TBM tracks, which contain color-coded, critical-position, and time-to-impact information.
- Query a Central Database Server (CDBS) to retrieve tactical information and display the output in report form.
- Specify how reception of incoming missile notification is received.

Review the information in the subsections below before running the TBMD application.

## 1.1 Installing the TBMD Application

The System Administrator must ensure that the system is correctly loaded with the Global Command and Control System (GCCS) 2.2 Runtime Environment before loading the TBMD Version 3.0.5.2 segment. The TBMD application can then be installed using the `Segment Installer` option on the `Software` pull-down menu. Reference the *Unified Build System Administrator's Guide* and the *Version Description Document Theater Ballistic Defense (TBMD) Segment* for more information on installing the TBMD application.

## 1.2 Enabling the TBMD Application

Three main steps must be completed before the TBMD application can be used: editing or creating a role, installing Ambiguous Electronic Intelligence (ELINT) Notation (AEN) data, and turning on the `TBMD Start` option. These steps are discussed in the following sections.

### 1.2.1 Edit or Create a Role

Immediately after installation, the Security Administrator must edit an existing role or create a new role to configure and enable the `TBMD Start` option and the `Show TBMD Window` option to appear on the GCCS SYSTEM `TDAs` pull-down menu. Reference the *Unified Build System Administrator's Guide* for information on creating and editing roles.

### 1.2.2 Install AEN Data

Install AEN data before using the TBMD application. AEN data is contained on the Unified Build (UB) Secret Data Tape segment (Version 2.1.2.2 or later). This data is used to cross reference specific missile types.

### 1.2.3 Turn on the TBMD Application

Select the `TBMD Start` option from the `TDAs` pull-down menu to turn on the TBMD application.

NOTE: TBMD notification processes are active *only* if the TBMD application has been turned on using the `TBMD Start` option.

When the `TBMD Start` option has been toggled on, the `GCCS-Default Mode` banner changes to `GCCS-Tbmd Mode`.

NOTE: The title of the banner and other windows may vary depending on the version of Unified Build used.

## 1.3 Additional Sources of Information

- *Unified Build 3.0.1.6G System Administrator's Guide*, Inter-National Research Institute (INRI), September 27, 1996
- *Unified Build 2.1.3.5 User's Guide, Volumes 1 and 2*, Inter-National Research Institute (INRI), May 15, 1996
- *Version Description Document Theater Ballistic Missile Defense (TBMD) Segment, Version 3.0.5.2*, Inter-National Research Institute (INRI), December 4, 1996.

## 1.4 User's Guide Organization

The *TBMD User's Guide* is organized into the following sections:

- Section 2, *TBMD Overview*, provides a brief introduction to TBMD.
- Section 3, *Listing TBM Tracks*, details how to list TBM tracks.
- Section 4, *Viewing Information about a Track*, describes how to display information describing a track.
- Section 5, *Graphing Flight Paths*, discusses how to graph a flight path.
- Section 6, *Accessing Audio, Overlay, and Event Logging Functions*, details how to use the `TBMD Control Panel`.
- Section 7, *Checking TBMD Status*, describes how to determine missile status and how to interpret error messages, how to set alert preferences, and how to track the number of incoming missiles.

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# Section 2

# TBMD Overview

The TBMD application must be turned on using the `TBMD Start` option from the `TDAs` pull-down menu and must run constantly to generate display data, as shown in Figure 1. The `GCCS-Tbmd Mode` window will be shown on the tactical display.

If the TBMD application is not running and data is received, no data will be plotted on the tactical display.

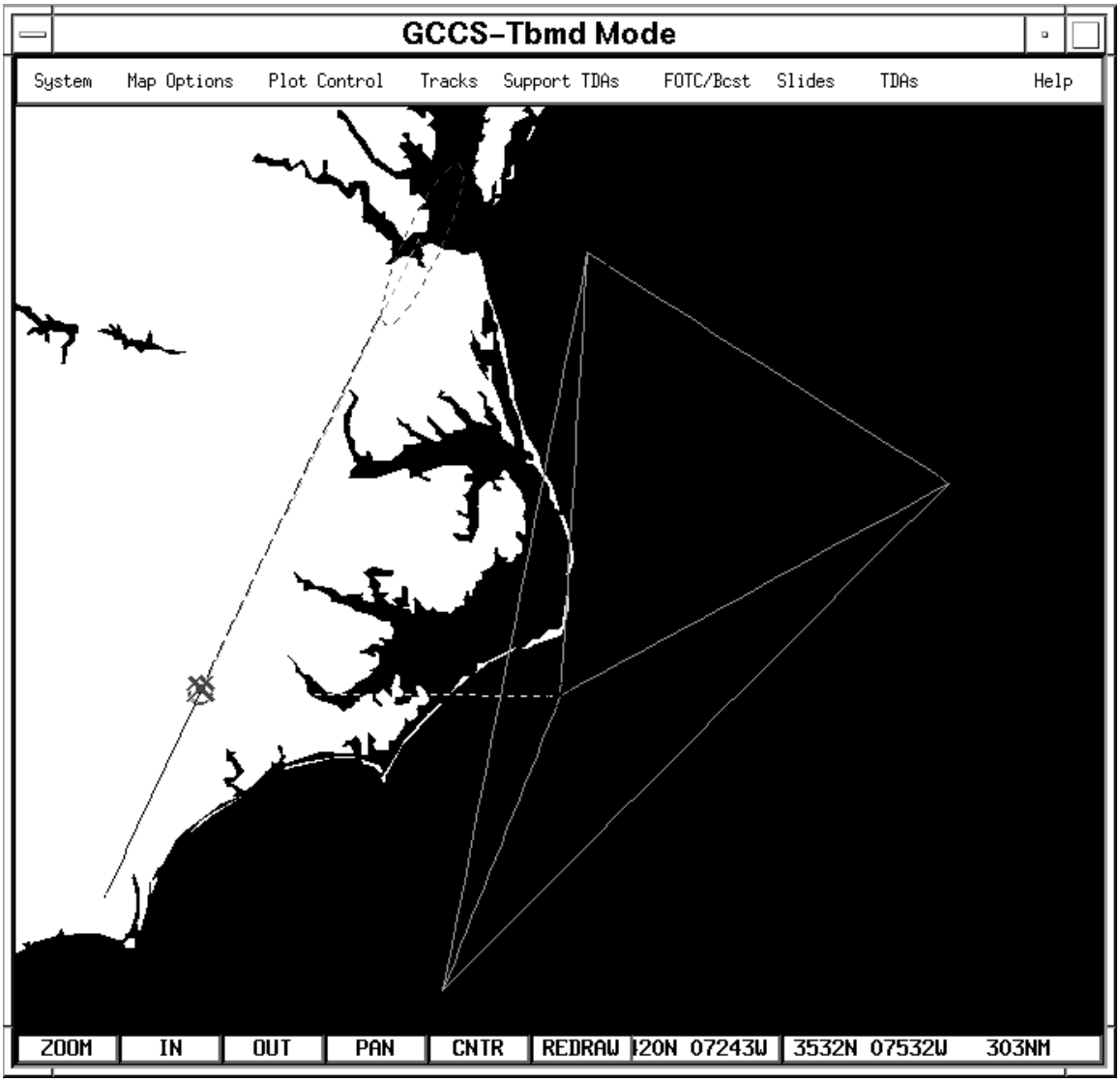


Figure 1. Launch and Impact AOUs

As each new TBM track is received into the system, TBMD is notified and a Launch area of uncertainty (AOU) is drawn on the tactical display (Figure 1).

Each TBM track has foreground color and is represented by a specific symbol. For example, an Air Hostile symbol during flight changes to a Surface Hostile symbol at impact. Double-click on the object's symbol on the display to open a status window with track-specific TBM data.

Launch and Impact AOUs are plotted on the display as two ellipses. A dashed yellow line connects reported launch point and reported projected impact points.

The dashed line changes to a solid line to indicate estimated position over time based on either projection algorithms or the radar CEC depending on availability (Figure 1).

If CEC track data is available, the missile symbol on the display changes to indicate that CEC radar contact has been made. The CEC network consists of command and control ships with the capability of tracking the TBM's trajectory.

The flight path line disappears from the display and the point-of-impact symbol changes from Air Hostile to Surface Hostile when the missile impacts.

# Section 3

# Listing TBM Tracks

Select the Show TBMD Window option from the TDAs pull-down menu to open the TBMD SUMMARY window (Figure 2). The TBMD SUMMARY window has a scroll list of all known TBM tracks. Each row of information in the TBMD SUMMARY window contains essential information about a single track, such as track number, TBM position, and TBM status. Click a column heading to sort the list of tracks in the order of that column. The default sort order is by ascending time of impact (TOI).

Information in the scroll list is color-coded on the screen:

- Information about a track is shown in *white* when the missile has launched.
- Information about a track changes to *blue* at impact.

As new TBM tracks enter the system and are drawn on the display, the TOI is calculated, and the list is updated and re-sorted accordingly.

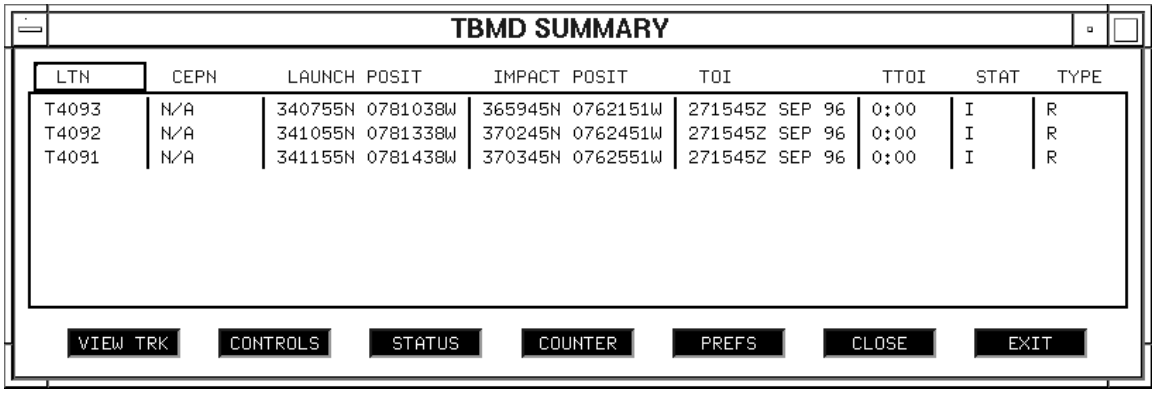


Figure 2. TBMD SUMMARY Window

## 3.1 TBMD SUMMARY Window Overview

The TBMD SUMMARY window has eight window fields: LTN, CEPN, LAUNCH POSIT, IMPACT POSIT, TOI, TTOI, STAT, and TYPE. The window has seven buttons: VIEW TRK, CONTROLS, STATUS, COUNTER, PREFS, CLOSE, and EXIT. Additionally, the window has a pop-up menu with ten options: VIEW TRACK, DELETE TRACK(S), DELETE ALL TRACKS, SHOW CEC NETWORK, SHOW STATUS BOARD, SHOW CONTROL PANEL, SHOW TBM COUNTER, CLOSE WINDOW, EDIT COLUMNS, and EXIT TBMD DISPLAY. These fields, buttons, and options are described in the following subsections.

### 3.1.1 TBMD SUMMARY Window Fields

The TBMD SUMMARY window has eight window fields: LTN, CEPN, LAUNCH POSIT, IMPACT POSIT, TOI, TTOI, STAT, and TYPE. These fields are described below.

**LTN**
Displays the local track number.

**CEPN**
Identifies the CEC track network number.

**LAUNCH POSIT**
Displays the position of launch.

**IMPACT POSIT**
Displays the projected position of impact.

**TOI**
Displays the time (in seconds) of impact.

**TTOI**
Displays the time (in 10-second increments) to impact.

**STAT**
Displays the status of the track based on the type of track reports that the system has received. Valid fields include:

- L Projected launch point received
- O Observation reports received
- P Missile burnout report received; projected missile path being plotted over time
- I Projected impact time passed.

**TYPE**
Describes the type of TBM. Valid fields include:

- L Live Training
- E Exercise
- R Real-World.

NOTE: Information contained in these fields can be sorted and customized by using the EDIT COLUMNS button in the TBMD SUMMARY window pop-up menu. This button is described in Section 3.2, *Editing Columns*.

NOTE: Click a column heading to sort the list of tracks in the order of that column. The default sort order is by ascending time of impact (TOI).

### 3.1.2 TBMD SUMMARY Window Buttons

The TBMD SUMMARY window has seven buttons: VIEW TRK, CONTROLS, STATUS, COUNTER, PREFS, CLOSE, and EXIT. These buttons are described below.

**VIEW TRK**
Shows information from a selected track. Described in Section 4, *Viewing Information about a Track.*

**CONTROLS**
Accesses audio, overlay, and event logging functions. Described in Section 6, *Accessing Audio, Overlay, and Event Logging Functions.*

**STATUS**
Provides a current listing of the missiles' status and a diagnostic aid for error messages. Described in Section 7.1, *Determining Missile Status and Interpreting Error Messages.*

**COUNTER**
Records the number of missiles being tracked. Described in Section 7.3, *Recording Incoming Missiles*.

**PREFS**
Opens the `TBMD Alert Preferences` window. Described in Section 7.4, *Setting Alert Preferences.*

**CLOSE**
Closes the `TBMD SUMMARY` window but leaves the TBMD application enabled.

**EXIT**
Closes the `TBMD SUMMARY` window and stops the TBMD application. The `GCCS-Tbmd Mode` banner changes to `GCCS-Default Mode`.

### 3.1.3 TBMD SUMMARY Window Pop-up Menu Options

The `TBMD SUMMARY` window has a pop-up menu with ten options: `VIEW TRACK`, `DELETE TRACK(S)`, `DELETE ALL TRACKS`, `SHOW CEC NETWORK`, `SHOW STATUS BOARD`, `SHOW CONTROL PANEL`, `SHOW TBM COUNTER`, `CLOSE WINDOW`, `EDIT COLUMNS`, and `EXIT TBMD DISPLAY`. Position the cursor inside the `TBMD SUMMARY` window and click the right mouse button. The pop-up menu appears. These options are described below.

**VIEW TRACK**
Shows information about a selected track. Described in Section 4, *Viewing Information about a Track.*

**DELETE TRACK(S)**
Deletes selected tracks from the `TBMD SUMMARY` window and deletes the flight path line in the display. The symbols remain on the display. Described in Section 4.4, *Deleting TBM Data Lines*.

**DELETE ALL TRACKS**
Deletes all tracks from the `TBMD SUMMARY` window and deletes the flight path lines in the display. The symbols remain on the display. Described in Section 4.4, *Deleting TBM Data Lines*.

**SHOW CEC NETWORK**
Plots a path along the TBM's trajectory.

**SHOW STATUS BOARD**
Provides a current listing of the missiles' status and a diagnostic aid for error messages. Described in Section 7.1, *Determining Missile Status and Interpreting Error Messages.*

**SHOW CONTROL PANEL**
Accesses audio, overlay, and event logging functions. Described in Section 6, *Accessing Audio, Overlay, and Event Logging Functions.*

**SHOW TBM COUNTER**
Records the number of missiles being tracked. Described in Section 7.3, *Recording Incoming Missiles*.

**CLOSE WINDOW**
Closes the `TBMD SUMMARY` window but leaves the TBMD application enabled.

**EDIT COLUMNS**
Edits the columns shown in the `TBMD SUMMARY` window. Columns can be added, removed, and re-organized. See Section 3.2, *Editing Columns*, for more information.

**EXIT TBMD DISPLAY**
Closes the `TBMD SUMMARY` window and stops the TBMD application. The `GCCS-Tbmd Mode` banner changes to `GCCS-Default Mode`.

## 3.2 Editing Columns

`TBMD SUMMARY` window columns can be customized by using the `Edit Columns` window (Figure 3). The `Edit Columns` window is described in the following subsections.

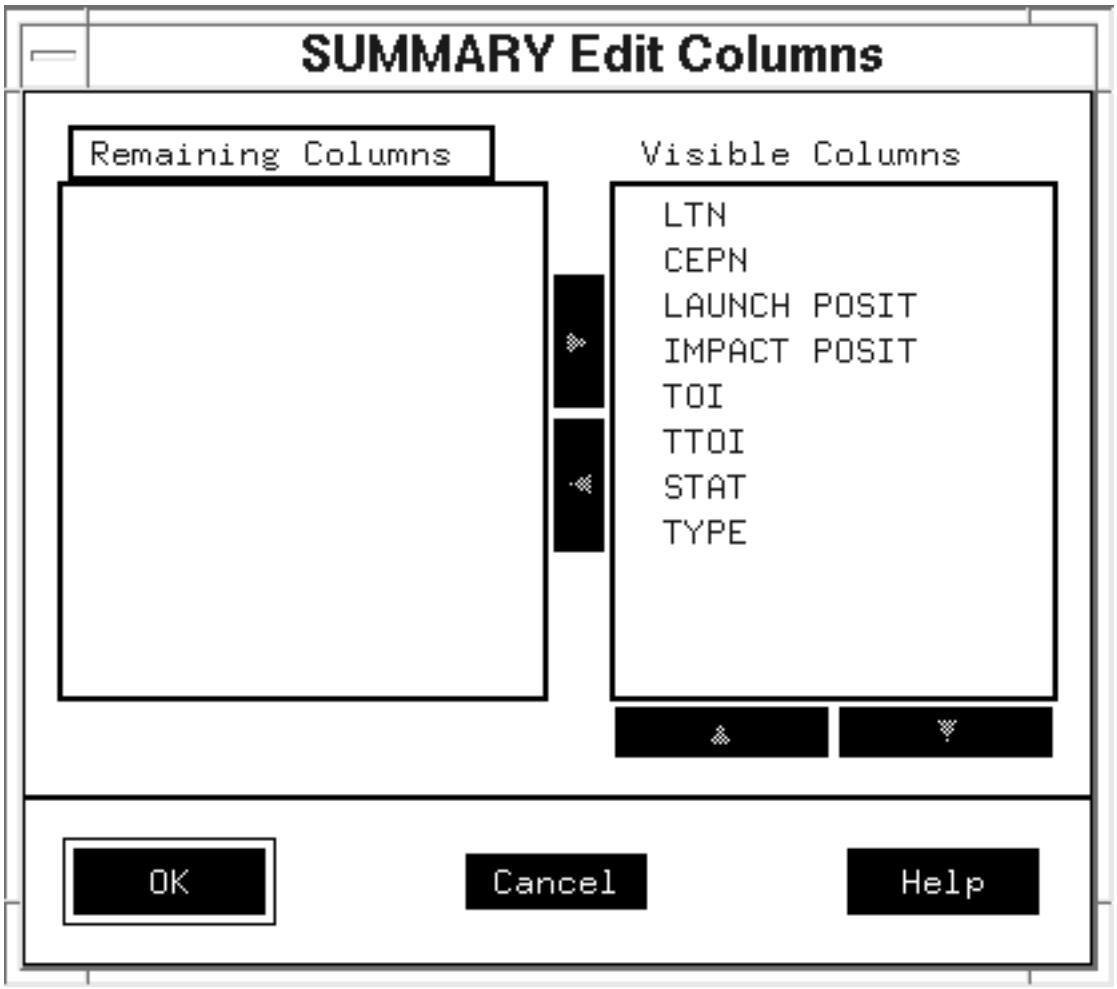


Figure 3. Edit Columns Window

### 3.2.1 Edit Columns Window Overview

Select the `EDIT COLUMNS` option in the `TBMD SUMMARY` window pop-up menu (Figure 2) to remove, insert, or move `TBMD SUMMARY` window columns. The `Edit Columns` window appears (Figure 3). This window has two scroll lists: `Remaining Columns` and `Visible Columns`. These scroll lists are described below.

**`Remaining Columns`**
Lists the columns available but not shown in the `TBMD SUMMARY` window.

**`Visible Columns`**
Lists the columns shown in the `TBMD SUMMARY` window.

The Edit Columns window also has three buttons: OK, Cancel, and Help. These buttons are described below.

**OK**
Saves changes and exits the Edit Columns window.

**Cancel**
Exits the Edit Columns window without saving changes.

**Help**
The Help button is not available in this release.

### 3.2.2 Adding and Deleting Columns

Follow the steps below to add columns to or delete columns from the TBMD SUMMARY window.

STEP 1: Select the Show TBMD Window option from the TDAs pull-menu menu to open the TBMD SUMMARY window (Figure 2).

STEP 2: Select the EDIT COLUMNS option in the TBMD SUMMARY window pop-up menu. The Edit Columns window appears (Figure 3).

STEP 3: Select a column title in either the Remaining Columns scroll list or the Visible Columns scroll list in the Edit Columns window.

STEP 4: Use the arrows between the scroll lists to move the column (1) to the Remaining Columns list to delete it from the TBMD SUMMARY window or (2) to the Visible Columns list to include it in the TBMD SUMMARY window.

STEP 5: Select the OK button in the Edit Columns window to save changes and exit the window, or select the Cancel button to exit the window without saving changes.

### 3.2.3 Changing the Order of Columns

Follow the steps below to change the order of columns in the TBMD Summary window.

STEP 1: Select the Show TBMD Window option from the TDAs pull-menu menu to open the TBMD SUMMARY window (Figure 2).

STEP 2: Select the EDIT COLUMNS option in the TBMD SUMMARY window pop-up menu. The Edit Columns window appears (Figure 3).

STEP 3: Select a column title in the Visible Columns scroll list in the Edit Columns window.

STEP 4: Use the up and down arrows below the Visible Columns list to move the column title in the list.

NOTE: The order in which the columns appear in the Visible Columns list reflects the order in which they appear in the TBMD SUMMARY window (i.e., the first column shown in the Visible Columns list is the first column going left to right in the TBMD SUMMARY window).

STEP 5: Select the OK button in the `Edit Columns` window to save the changes and exit the window, or select the `Cancel` button to exit the window without saving changes.

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# Section 4

# Viewing Information about a Track

View information about a track using one of the following methods:

Method 1. Select a track from the TBMD SUMMARY window (Figure 2) and click on the VIEW TRK button

Method 2. Double-click on a track listed in the TBMD SUMMARY window.

The TBM window for the selected track appears (Figure 4).

NOTE: This guide refers to the window that appears as the TBM window. The exact title of the TBM window, however, depends on the type of TBM track (e.g., Live Training, Exercise, or Real-World). The title of the TBM window will be one of the following:

```
TBM [LTN] LIVE TRAINING
TBM [LTN] REAL-WORLD
TBM [LTN] EXERCISE
```

NOTE: Multiple TBM windows can be displayed as long as space is available on the screen. TBM windows also can be iconified.

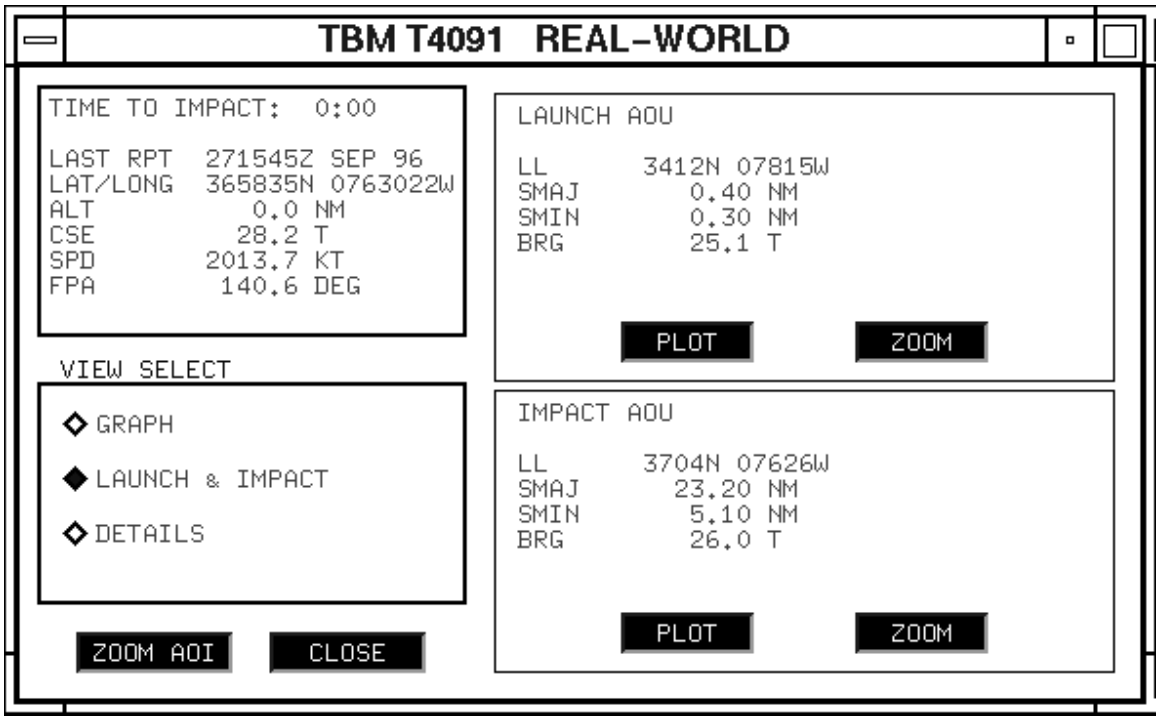


Figure 4. TBM Window

## 4.1 TBM Window Overview

The TBM window contains three panels: a `TIME TO IMPACT` panel; a `VIEW SELECT` panel; and a third panel that displays `Graph`, `Launch and Impact`, or `Details` information depending on the toggle selected in the `VIEW SELECT` panel.

**`TIME TO IMPACT` Panel**
Lists the missile impact time displayed in minutes:seconds. This panel is described in Section 4.2, *Viewing Time-to-Impact Information.*

**`VIEW SELECT` Panel**
Lists three toggles: `GRAPH`, `LAUNCH & IMPACT`, and `DETAILS`. The selected toggle determines the panel that appears on the right side of the TBM window (e.g., if the `LAUNCH & IMPACT` toggle is chosen, the `LAUNCH AOU` panel and the `IMPACT AOU` panel appear). The `VIEW SELECT` panel is described in Section 4.3, *Selecting Specific Information to View*.

The TBM window contains two buttons: `ZOOM AOI` and `CLOSE`. These buttons are described below.

**`ZOOM AOI`**
Centers the tactical display on the area of impact. This option is also available in the TBM window pop-up menu.

**`CLOSE`**
Exits the TBM window and returns to the previous window. This option is also available in the TBM window pop-up menu.

The TBM window pop-up menu, in addition to the ZOOM AOI and CLOSE options, contains DELETE TRACKS and SUMMARY options. The DELETE TRACKS and SUMMARY options are described below.

**DELETE TRACKS**
Deletes selected tracks from the TBMD SUMMARY window and deletes the flight path line in the display. This option is described in Section 4.4, *Deleting TBM Data Lines*.

**SUMMARY**
Opens the TBMD SUMMARY window. This option performs the same function as choosing the Show TBMD Window option from the TDAs pull-down menu. The TBMD SUMMARY window appears listing the known TBM tracks (Figure 2).

## 4.2 Viewing Time-to-Impact Information

The TIME TO IMPACT panel lists the missile impact time displayed in minutes:seconds. This panel contains the following fields: TIME TO IMPACT, LAST RPT, LAT/LONG, ALT, CSE, SPD, and FPA. These fields are described below.

**TIME TO IMPACT**
Time (in minutes:seconds) to impact.

**LAST RPT**
Last track report into the TBMD database.

**LAT/LONG**
Latitude and longitude for the TBM.

**ALT**
Altitude (in NM).

**CSE**
Course of the missile.

**SPD**
Speed (in knots).

**FPA**
Flight Path Angle (in degrees).

## 4.3 Selecting Specific Information To View

The VIEW SELECT panel has three toggles: GRAPH, LAUNCH & IMPACT, and DETAILS. These toggles determine the panel that appears on the right side of the TBM window. For example, by choosing the LAUNCH & IMPACT toggle, the LAUNCH AOU panel and the IMPACT AOU panel appear as shown in Figure 4.

### 4.3.1 Showing a Graph of the Flight Path

The GRAPH toggle opens the GRAPH window on the right side of the TBM window. The time-versus-altitude graph is described in Section 5, *Graphing Flight Paths.*

### 4.3.2 Showing Launch and Impact Information

Select the LAUNCH & IMPACT toggle to view the LAUNCH AOU panel and the IMPACT AOU panel. The LAUNCH AOU and IMPACT AOU panels appear on the right side of the TBM window (Figure 4). These panels are described below.

#### LAUNCH AOU Panel

The LAUNCH AOU panel shows the TBM's projected launch coordinates. The panel contains the following fields: LL, SMAJ, SMIN, and BRG. These fields are described below.

**LL**
Projected latitude and longitude of the launch AOU.

**SMAJ**
Semi-major axis of the ellipse AOU.

**SMIN**
Semi-minor axis of the ellipse AOU.

**BRG**
Probable bearing/trajectory of the ellipse AOU.

The LAUNCH AOU panel also has two buttons: PLOT and ZOOM. These buttons are described below.

**PLOT**
Queries the Central Database Server (CDBS) for the probable launch point (Launch AOU). PLOT is not available in this release.

**ZOOM**
Centers the display on the probable launch point (Launch AOU).

#### IMPACT AOU Panel

The IMPACT AOU panel shows the projected impact point of the TBM. The panel contains the following fields: LL, SMAJ, SMIN, and BRG. These fields are described below.

**LL**
Projected latitude and longitude of the impact AOU.

**SMAJ**
Projected semi-major axis of the ellipse AOU.

**SMIN**
Projected semi-minor axis of the ellipse AOU.

**BRG**
Probable bearing/trajectory of the ellipse AOU.

The IMPACT AOU panel also has two buttons: PLOT and ZOOM. These buttons are described below.

**PLOT**
Queries the Central Database Server (CDBS) for the projected area of impact (IMPACT AOU). PLOT is not available in this release.

**ZOOM**
Centers the display on the projected AOU.

### 4.3.3 Showing Details

Select the DETAILS toggle to view the RECENT REPORTS, WEAPON, and OBSERVER POSITION panels. These panels appear on the right side of the TBM window (Figure 5). These panels are described below.

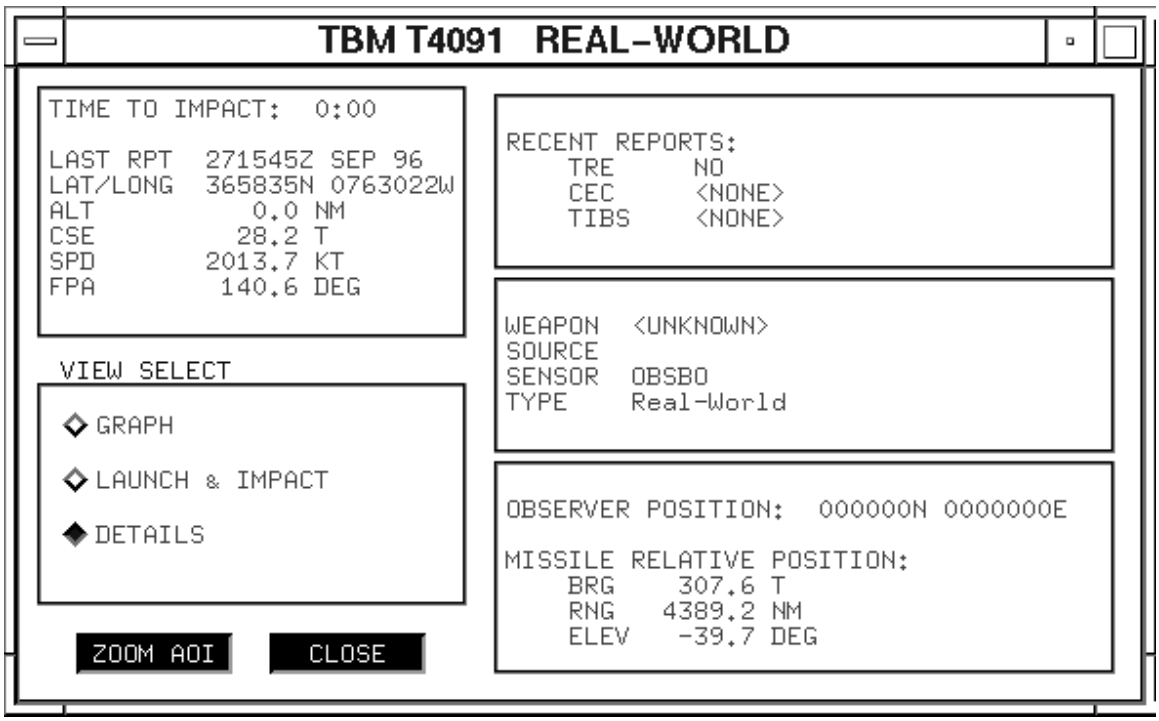


Figure 5. TBM Details Window

### RECENT REPORTS Panel

The RECENT REPORTS panel has three fields of information: TRE, CEC, and TIBS. These fields are described below.

**TRE**
Identifies whether the Tactical Receive Equipment (TRE) is reporting the TBM.

**CEC**
Identifies the CEC unit currently tracking the TBM.

**TIBS**
Identifies the Tactical Information Broadcast System (TIBS) tracking the TBM.

### WEAPON Panel

The WEAPON panel has three fields of information: SOURCE, SENSOR, and TYPE. These fields are described below.

**WEAPON**
Describes the type of weapon (e.g., unknown).

**SOURCE**
Shows the source of incoming data (e.g., CEC).

**SENSOR**
Identifies the reporting sensor path (e.g., CEC or TRE).

**TYPE**
Identifies the missile, based on a value retrieved from AEN data files.

### OBSERVER POSITION Panel

The OBSERVER POSITION panel has three fields of information describing the missile relative to current observer position: BRG, RNG, and ELEV. These fields are described below.

**OBSERVER POSITION**
Provides the observer position (e.g., 000000N, 000000E).

**BRG**
Probable bearing/trajectory of the launched TBM.

**RNG**
Range (in NM).

**ELEV**
Elevation (in degrees).

## 4.4 Deleting TBM Data Lines

Select the DELETE TRACK(S) or DELETE ALL TRACKS options from the TBMD SUMMARY window pop-up menu or select the DELETE option in the TBM window pop-up menu to delete selected tracks from the TBMD SUMMARY window. The flight path line in the display will be deleted but the ship symbol will remain on the display.

Follow the steps below to delete TBM data lines using the TBMD SUMMARY window pop-up menu.

STEP 1: Select a track from the TBMD SUMMARY window (Figure 2).

STEP 2: Select the DELETE TRACK(S) or DELETE ALL TRACKS option in the TBMD SUMMARY window pop-up menu. A confirmation window appears querying for confirmation: "Confirm Deletion of Track N?" (N is the number of the track.)

STEP 3: Click the DELETE button to delete the track when the confirmation window appears, or click the CANCEL button to close the window without deleting the track.

Follow the steps below to delete TBM data lines using the TBM window pop-up menu.

STEP 1: Select a track from the TBMD SUMMARY window (Figure 2) and click on the VIEW TRACK button or double-click on the track name in the TBMD SUMMARY window. The TBM window for the selected track appears (Figure 4).

STEP 2: Select the DELETE option in the TBM window pop-up menu. A confirmation window appears querying for confirmation: "Confirm Deletion of Track N?" (N is the number of the track.)

STEP 3: Click the DELETE button to delete the track when the confirmation window appears, or click the CANCEL button to close the window without deleting the track.

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# Section 5

# Graphing Flight Paths

Follow the steps below to graph the flight path of a missile.

STEP 1: Select a track from the TBMD SUMMARY window (Figure 2).

STEP 2: Click on the VIEW TRK button or double-click on the track name in the window. The TBM window for the selected track appears (Figure 4).

STEP 3: Select the GRAPH toggle in the VIEW SELECT panel to draw the flight graph for the selected TBM (Figure 6).

The graph shows a time-versus-altitude graph displaying the flight path of the missile in the vertical plane.

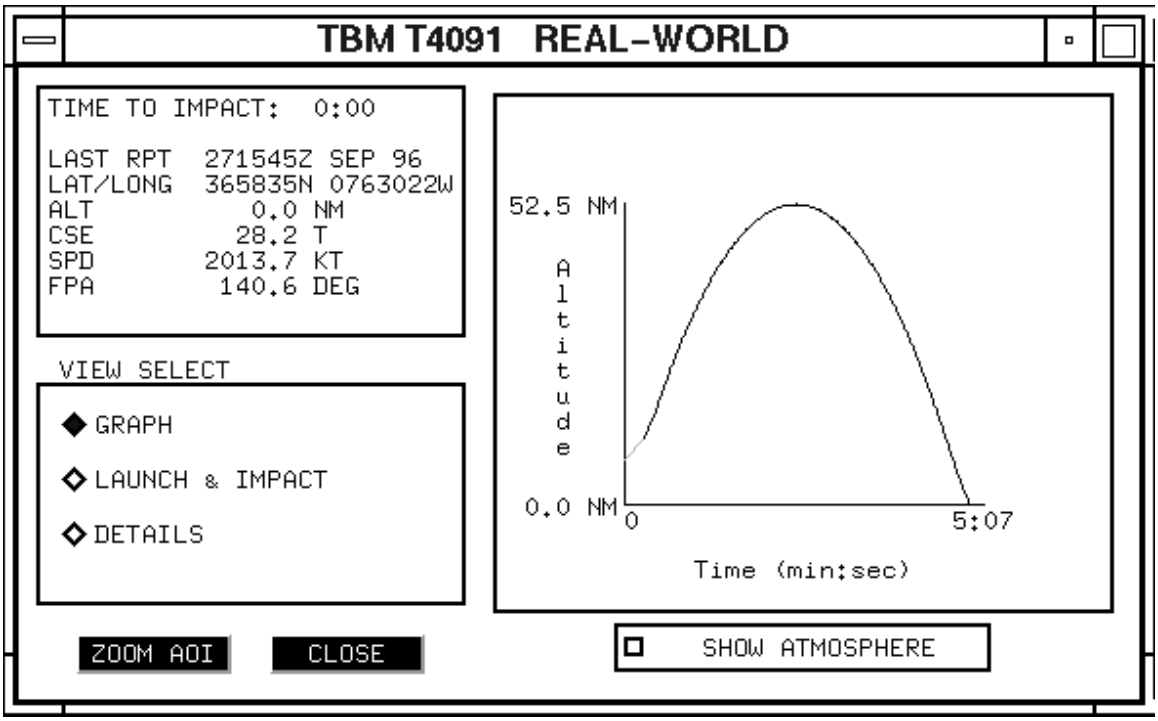


Figure 6. TBM Time-versus-Altitude Display

Flight path lines are "color coded" to indicate the source of each data point.

- Red indicates a plot based on data received over the Tactical Data Distribution System (TDDS).
- Green indicates actual CEC track data.
- White indicates the projected flight path, which is generated by a TBMD algorithm.

Click on the SHOW ATMOSPHERE button in the GRAPH panel to show the lower, denser atmosphere as a solid blue field across the bottom of the flight graph (Figure 7).

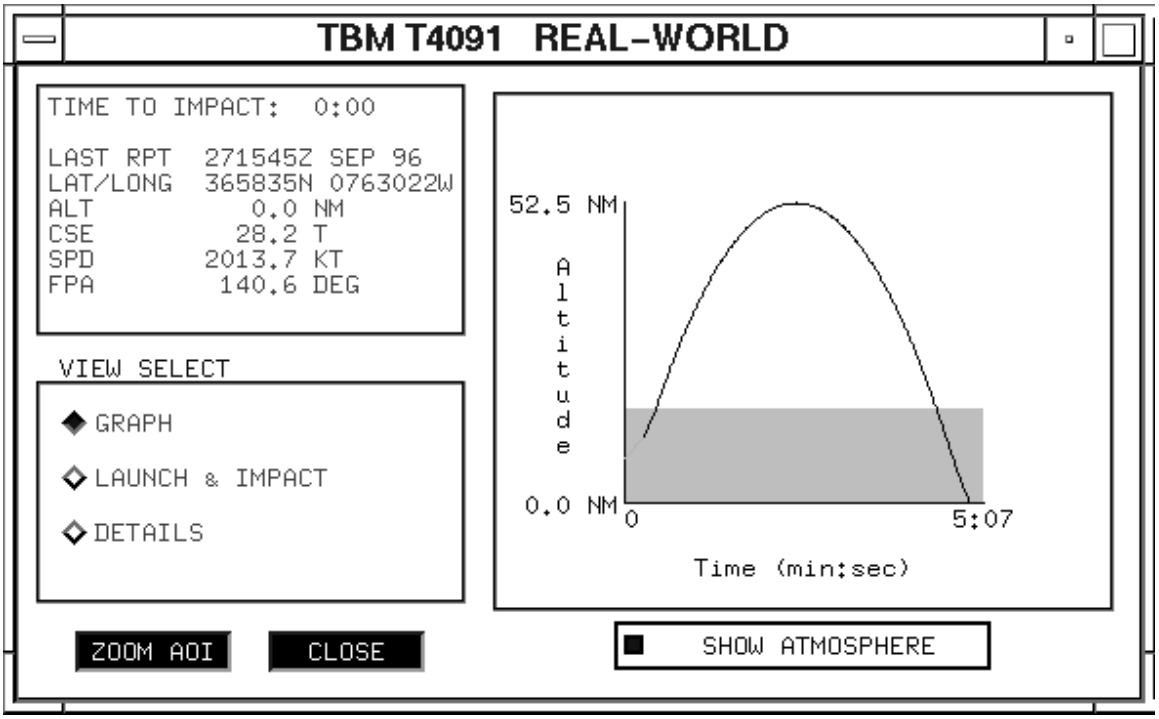


Figure 7. Show Atmosphere Option

Click on the SHOW ATMOSPHERE button again to remove the solid blue field from the graph.

# Section 6

# Accessing Audio, Overlay, and Event Logging Functions

Click the CONTROLS button in the TBMD SUMMARY window (Figure 2) to open the TBMD Control Panel (Figure 8). The TBMD Control Panel can also be accessed by selecting the SHOW CONTROL option in the TBMD SUMMARY window pop-up menu. The TBMD Control Panel is used to access audio, overlay, and event logging functions.

The TBMD Control Panel contains four panels: General, Audio, Overlays, and Event Logging. These panels are described below.

**General**
Controls the alert mode, indicates the types of missile reports received by the system, and broadcasts the project impact points over the TIBS channel.

**Audio**
Controls the volume for audible alert. See Section 6.2, *Controlling Audio*, for more information.

**Overlays**
Sends TBMD overlays automatically to other workstations through communications channels. See Section 6.3, *Sending Overlays to Other Workstations*, for additional information.

**Event Logging**
Replays a missile's trajectory. This function currently is used only for post-exercise analysis.

The TBMD Control Panel has five buttons: TEST AUDIO, EDIT HEADER, ADVANCED FEATURES, OK, and CANCEL. These buttons are described below.

**TEST AUDIO**
Tests the current volume control setting for the audible alert. TEST AUDIO is not available in this release.

**EDIT HEADER**
Sets the header information for outgoing overlays. Described in Section 6.3, *Sending Overlays to Other Workstations.*

**ADVANCED FEATURES**
ADVANCED FEATURES is not available in this release.

**OK**
Accepts changes and closes the window.

**CANCEL**
Discards changes and closes the window.

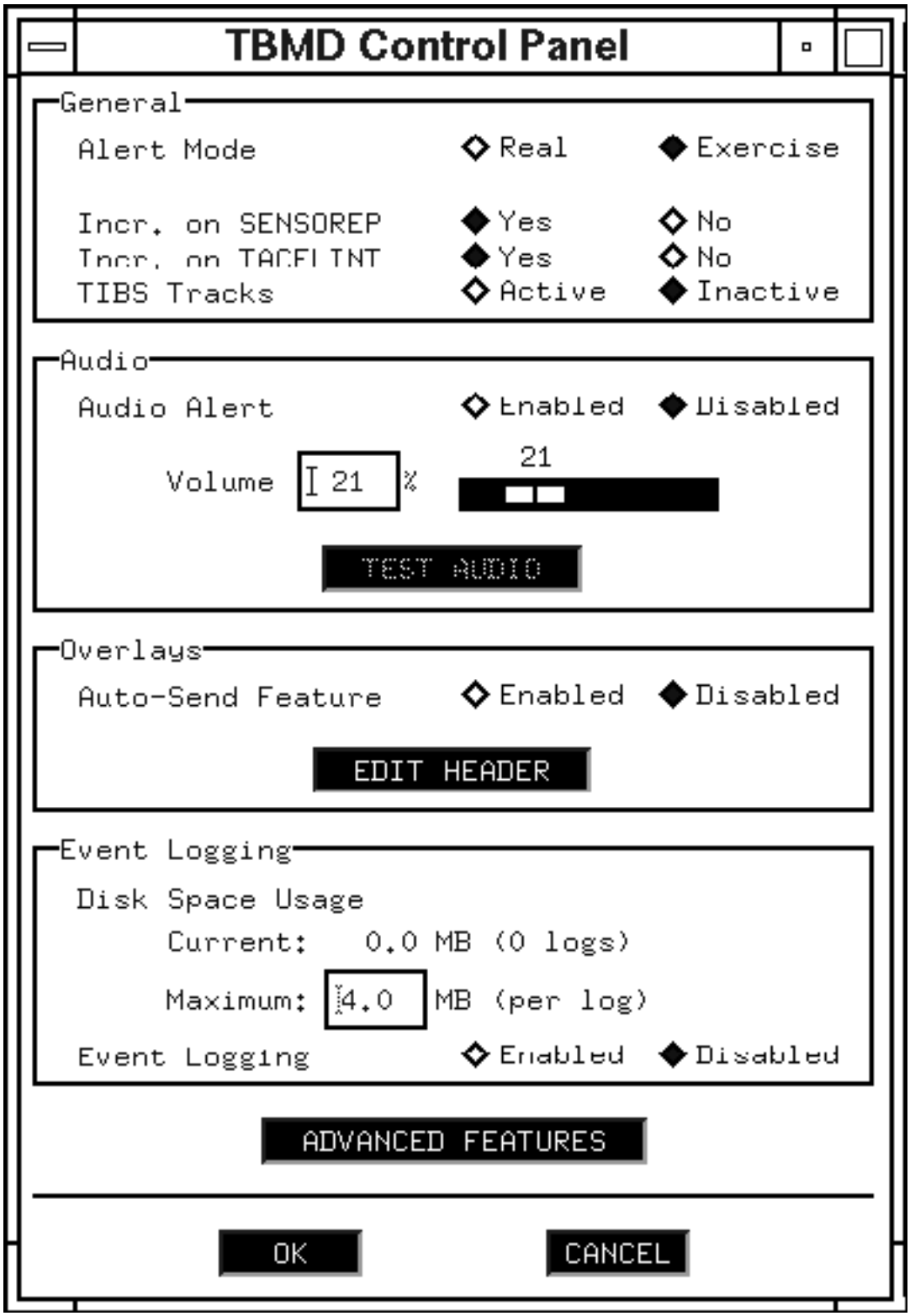


Figure 8. TBMD Control Panel

## 6.1 Performing General Functions

The General panel in the TBMD Control Panel controls the alert mode, indicates the types of missile reports received by the system, and broadcasts the project impact points over the TIBS channel. The General panel contains four toggles: Alert Mode, Incr. on SENSOREP, Incr. on TACELINT, and TIBS Tracks. These toggles are described below.

**Alert Mode**
Toggles between Real and Exercise to indicate if the transmitted TBMD overlays represent real missiles or exercise missiles. The default mode is Exercise.

NOTE: If the Alert Mode is set to Real, TBMD overlays will be transmitted as Flash overlays.

**Increment on SENSOREP/Increment on TACELINT**
Toggles between Yes and No to control whether the TBMD Counter is incremented based on the type of TDDS messages received by the system.

**TIBS Tracks**
Toggles between Active and Inactive to broadcast the projected impact point over TIBS, when used in conjunction with the GCCS TIBS interface. TIBS Tracks is not available in this release.

NOTE: The TIBS channel must be configured in the Communications option in the Comms pull-down menu.

NOTE: When the TIBS Tracks diamond is active, the TBMD option injects a LINK track at the projected impact point.

## 6.2 Controlling Audio

The Audio panel in the TBMD Control Panel (Figure 8) can be used to control the volume for audible alert. The Audio panel contains a toggle to enable or disable audio capability, a volume control adjuster, and a TEST AUDIO button. Follow the steps below to enable, disable, and adjust the alert volume.

NOTE: The TEST AUDIO button is not available in this release.

STEP 1: Click the CONTROLS button in the TBMD SUMMARY window (Figure 2) to open the TBMD Control Panel window (Figure 8).

STEP 2: Select the Enabled or Disabled toggle in the Audio panel to control the audio capability.

STEP 3: Either type the percentage in the Volume box or use the volume control sliding scale adjuster for the audible alert. The sliding scale adjuster sets the volume in increments of 0 to 100.

NOTE: For example, in Figure 8 the volume setting is 21, which indicates the volume is at the lower end of the scale. Sliding the scale control forward to 75 would set the sound to three-quarters of the allowable volume.

STEP 4: Click the OK button to accept the changes and close the TBMD Control Panel window, or click the CANCEL button to discard changes and close the window.

## 6.3 Sending Overlays to Other Workstations

Use the Overlays panel on the TBMD Control Panel (Figure 8) to generate and send TBMD overlays to other workstations automatically when a new TBM is detected. Follow the steps below to send TBMD overlays.

STEP 1: Click the CONTROLS button in the TBMD SUMMARY window (Figure 2) to open the TBMD Control Panel (Figure 8).

STEP 2: Toggle the Enabled diamond on in the Overlays panel; the Auto-Send Feature generates and sends an overlay when a new TBM is detected.

STEP 3: Click the EDIT HEADER button to open the TBMD Overlay Header window (Figure 9), which allows header information and classification for outgoing overlays to be set.

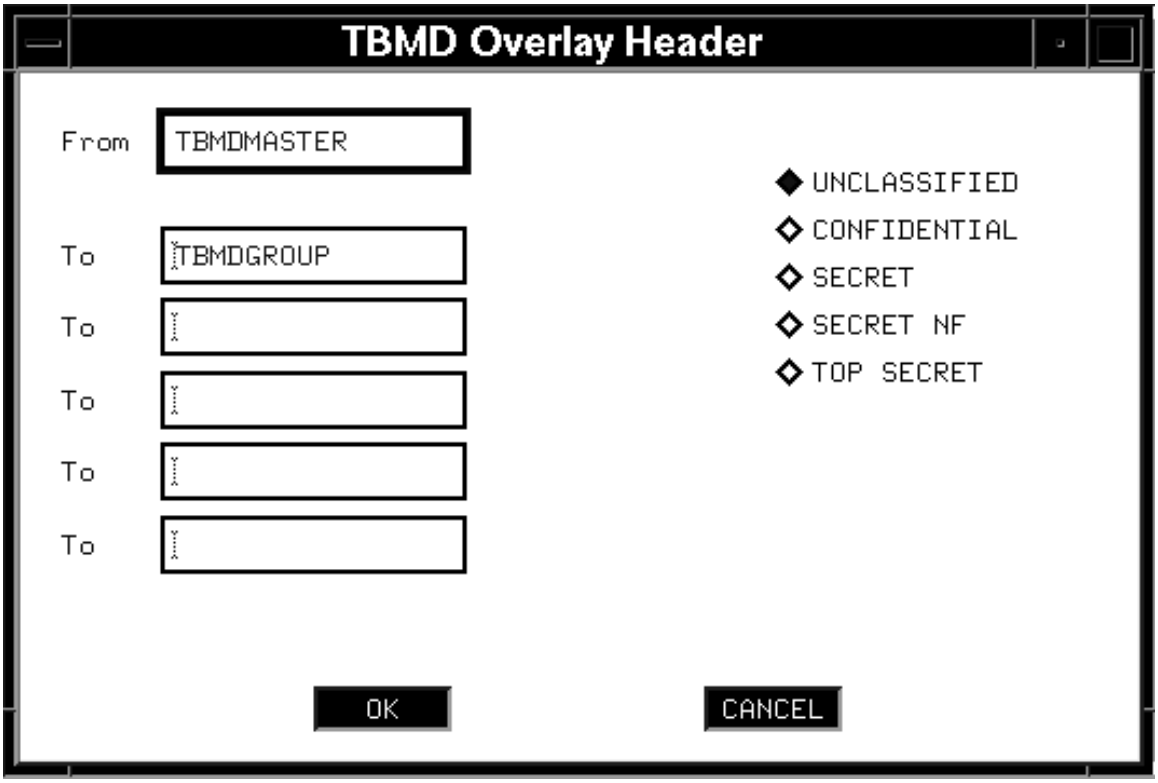


Figure 9. TBMD Overlay Header Window

STEP 4: Enter header information in the following fields:

**From**—message origin.

**To**—five fields are provided as destinations for the overlay. Each entry in the `To` field must match an entry in the GCCS Autoforward Table in order to transmit the TBMD overlay.

STEP 5: Click the applicable diamond in the `TBMD Overlay Header` window to choose the security classification of the overlay: `UNCLASSIFIED`, `CONFIDENTIAL`, `SECRET`, `SECRET NF`, or `TOP SECRET`.

STEP 6: Click the `OK` button to save the header information, or click the `CANCEL` button to discard the changes and return to the `TBMD Control Panel`.

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# Section 7

# Checking TBMD Status

## 7.1 Determining Missile Status and Interpreting Error Messages

Click the STATUS button on the TBMD SUMMARY window (Figure 2) to provide a current listing of the missiles' status and a diagnostic aid for interpreting error messages via the TBMD STATUS window (Figure 10). The TBMD STATUS window can also be accessed by selecting SHOW STATUS BOARD from the TBMD SUMMARY window pop-up menu.

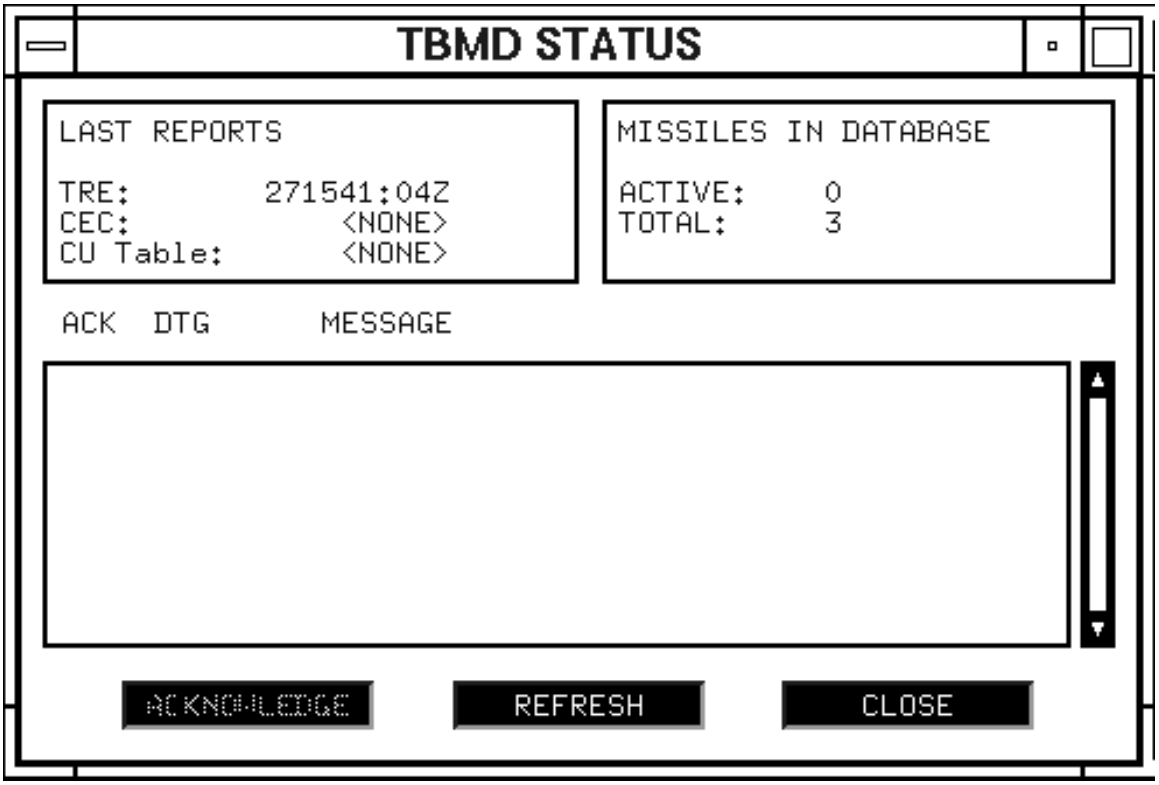


Figure 10. TBMD STATUS Window

## 7.2 TBMD STATUS Window Overview

The TBMD STATUS window has buttons (which are also available by using the pop-up menu), panels, and a scroll list. These options are described in the following subsections.

### 7.2.1 TBMD STATUS Window Buttons

The TBMD STATUS window has three buttons: ACKNOWLEDGE, REFRESH, and CLOSE. These buttons are also available in the TBMD STATUS window pop-up menu. These buttons are described below.

**ACKNOWLEDGE**
Acknowledges the message(s) within the scroll list. Not available in this release.

**REFRESH**
Updates the information from the last TBM report to the current report.

**CLOSE**
Closes the window and returns to the previous window.

### 7.2.2 TBMD STATUS Window Panels

The TBMD STATUS window has three panels: LAST REPORTS, MISSILES IN DATABASE, and an Acknowledge panel. These panels are described below.

#### LAST REPORTS Panel

The LAST REPORTS panel provides information on the missile being tracked. This panel contains the following fields: TRE, CEC, and CU Table. These fields are described below.

**TRE**
Provides the date and times of last reports received by TRE.

**CEC**
Provides the date and times of last reports received by CEC.

**CU Table**
Provides the date and times of last reports received by CU Table.

#### MISSILES IN DATABASE Panel

The MISSILES IN DATABASE panel shows the status of up to 100 active and inactive missiles. This is a dynamically updated panel. This panel contains the following fields: ACTIVE and TOTAL. These fields are described below.

**ACTIVE**
Lists TBMs currently being tracked (i.e., those that have not impacted).

**TOTAL**
Lists total TBMs for this session, both active and inactive.

### ACKNOWLEDGE Panel Scroll List Fields

Information in the Acknowledge panel scroll list is used primarily to record error messages received for the TBMs being tracked. This panel contains the following fields: `ACK`, `DTG`, and `MESSAGE`. These fields are described below.

**ACK**
Lists whether or not the message has been acknowledged.

**DTG**
Lists the date-time-group (DTG) of the message.

**MESSAGE**
Displays the first line of the error or message.

## 7.3 Recording Incoming Missiles

Use the `TBMD Counter` window to display the number of missiles in flight. This is a dynamically updated window. Click the `COUNTER` button in the `TBMD SUMMARY` window (Figure 2). The `TBMD Counter` window appears (Figure 11).

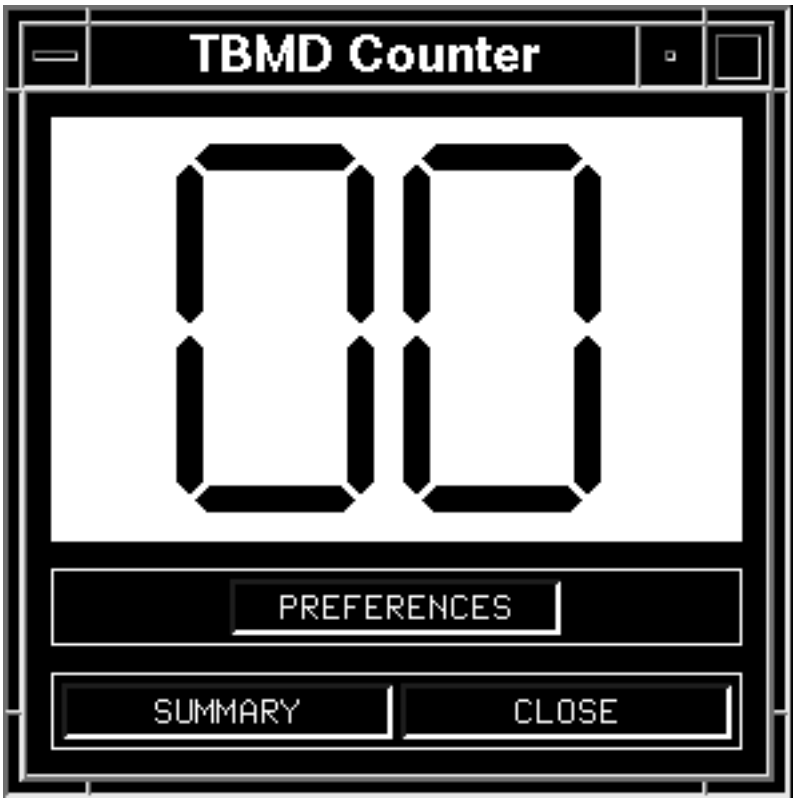


Figure 11. TBMD Counter Window

When the TBMD Counter window is activated, it appears on the tactical display and remains open until it is closed.

The TBMD Counter window has three buttons: PREFERENCES, SUMMARY, and CLOSE. These buttons are described below.

**PREFERENCES**
Opens the TBMD Alert Preferences window. Described in Section 7.4, *Setting Alert Preferences.*

**SUMMARY**
Opens the TBMD SUMMARY window, which lists known TBM tracks. This option performs the same function as choosing the Show TBMD Window option from the TDAs pop-up menu.

**CLOSE**
Closes the TBMD COUNTER window.

## 7.4 Setting Alert Preferences

Select the PREFERENCES button in the TBMD Counter window (Figure 11) or select the PREFS button in the TBMD SUMMARY window (Figure 2) to open the TBMD Alert Preferences window (Figure 12). This window allows alert preferences of newly received incoming missiles to be set. When an incoming missile is received into the system, the user can be alerted by the TBMD COUNTER, the TBMD SUMMARY WINDOW, or by JMCIS ALERT ONLY.

This window contains three toggles: TBMD COUNTER, TBMD SUMMARY WINDOW, and JMCIS ALERT ONLY. These toggles are described below.

**TBMD COUNTER**
Designates that the TBMD COUNTER window (see Figure 11) will be incremented to display a running count of missiles in flight when an incoming missile is newly received by the system.

**TBMD SUMMARY WINDOW**
Designates that the TBMD SUMMARY window, which provides a list of known TBM tracks, will open on the screen when an incoming missile is newly received by the system.

**JMCIS ALERT ONLY**
Designates that alerts are generated on the GCCS display when an incoming missile is newly received by the system.

The TBMD Alert Preferences window also contains two buttons: OK and CANCEL. These buttons are described below.

**OK**
Saves changes and exits the window.

**CANCEL**
Exits the window without saving the changes.

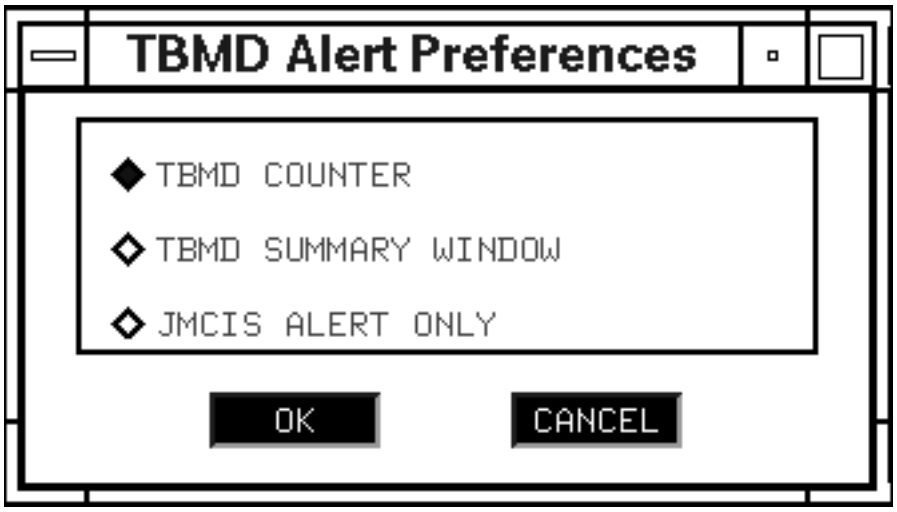


Figure 12. TBMD Alert Preferences

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